

THIRD REPORT
OF THE
Indian Tariff Board
REGARDING THE
GRANT OF PROTECTION
TO THE
STEEL INDUSTRY



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Third Report of the Indian Tariff Board regarding the Grant of Protection to the Steel Industry.

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CHAPTER I.

Comparison of Costs of Steel Manufacture in India with those in other Countries.

We have already submitted to the Government of India, in our First and Second Reports, certain proposals for the grant of protection to the steel industry. It remains now for us to give expression to our views on three branches of the subject—locomotive building, steel casting and enamelled ware—regarding which we have at present no recommendations to make. These are dealt with in Chapters II to IV. We have taken the opportunity also to explain, in this Chapter, the reasons why in our First Report we have not attempted to make a detailed comparison between the costs of steel manufacture in India and the corresponding costs in other countries. We have attached three annexures to this Report:

Annexure A.—A brief summary of our proceedings during our enquiry into the steel industry.

Annexure B.—A memorandum, prepared by one of the Members of the Board, regarding the manufacture of wire. This memorandum formed the basis of Chapter V of our Second Report.

Annexure C.—A note on the increased cost of wagons manufactured in India arising from the higher duties proposed on rolled steel (see Chapter III, paragraph 25 of the Second Report).

2. In paragraph 102 of our First Report we alluded to the special difficulty in our enquiry created by the fact that, at present, rolled steel is manufactured in India by only one firm. In these circumstances a direct comparison between the actual cost of manufacture at Jamshedpur with the corresponding costs in other countries would clearly be valuable. If this comparison could be made, item by item, at every stage of the processes by which pig iron is converted into the finished steel section, and if in the case of each item the extent of the handicap or the advantage arising from Indian conditions (whether economic, technical, social or climatic) could be calculated, a means would be provided by which the measure of success attained at Jamshedpur could be estimated. The desirability of a comparison of this kind was suggested to us by some of the witnesses, and one—Mr. Homi, whom we examined at Bombay—laid before us certain statements about

costs in the United States of America which he considered would form a satisfactory basis for the comparison.

3. A satisfactory comparison of steel making costs is, however, a difficult matter. The initial difficulty is to obtain any reasonably complete statement of costs for other countries. A good deal of information is available about American and German pre-war costs, and to a smaller extent about American post-war costs. But at the present time competition with the Indian steel industry comes chiefly from England and Belgium, and it is precisely for these two countries that recent information is least complete. As regards Belgium (and this applies to Germany also) the difficulty of converting costs incurred and recorded in a depreciated currency into their real equivalent in a rupee or sterling currency with the accuracy required for a useful comparison is practically insurmountable. English manufacturers on the other hand rarely allow more than isolated items of their costs to become available for public use, and since conditions became relatively stable (*e.g.*, since the middle of 1922), no reliable statement of costs has been published in sufficient detail to justify a comparison with Indian costs. The published figures about American costs are less incomplete than the English or Belgian. But they are higher than European costs and on that account are not satisfactory as a basis of comparison for our purpose, and they are open to the same difficulties of interpretation as most statements of works costs.

4. Of the various statements of costs from different sources which we have considered, no two are in quite the same form or distribute their charges between the same detailed items. Two instances from our own enquiry will illustrate the real difficulty of making accurate comparisons of the statements issued by different works. In Table VI attached to their first representation, the Tata Iron and Steel Company presented detailed statements of their costs, but it was only after oral examination that we could be certain of the precise meaning of some of the items (*e.g.*, whether in Table VI-A the labour employed in furnace relining, or at the gas producers, was or was not included in the item "labour," and where the division was made between "refractories" and "relining"). Secondly, when we examined Mr. Alexander, General Superintendent of the Works at Jamshedpur, he submitted tabular statements of costs at certain works in Canada and the United States. In the Canadian figures the difference between the cost per ton of pig iron and of steel ingots was unusually low. From his knowledge of the actual circumstances Mr. Alexander was able to explain that, in the works whose figures he had given, a large proportion of exceptionally cheap scrap was used. Any direct comparison of these costs with the Jamshedpur costs would, without such an explanation, have been not merely useless but misleading.

5. The examples just mentioned indicate the caution with which ordinary statements of costs must be considered. In the conversion of pig iron to rolled steel the cost is affected by many variable factors such as the amount of impurities in the pig iron, the availability of scrap, the rates of wages, the prices of materials, the quality of the materials available for building and lining the furnaces, the quality of such feeding materials as lime, the quality of the steel required by the market, the number of different qualities required and the size of the market for each particular size of each product. None of these factors is entirely under the control of the individual manufacturer. It can safely be said that there are no two important steel-making districts in the world where all these factors are identical. The importance of the technical conditions is illustrated inside the Indian iron and steel industry itself. The Indian manufacturer does not claim to be more efficient in blast furnace practice than his Western competitor merely because he can make pig iron more cheaply in present circumstances; and similarly it would not be just to condemn him for inefficiency merely because he is unable at present to make steel as cheaply as European manufacturers.

6. It may be useful if we draw attention here to an item in the costs of manufacture in India which not merely adds to the difficulty of comparison, but is also of substantial importance in itself, and in a greater or less degree affects all industries. The Indian manufacturer must import practically the whole of his plant and machinery for the manufacture of iron and steel, and also a large proportion of his consumable stores and spare parts. On these imports he has to pay large sums for sea freight and for Indian Customs duties. These materials are drawn almost entirely from the highly industrialised countries where steel is made on a large scale. Steel makers in those countries have only trifling charges to bear corresponding with the freights and duties which the Indian manufacturer must pay. These additional charges affect the depreciation, the working capital on which interest has to be provided and many items of the works costs of the Indian steel maker; and by their effect on the capital expenditure they raise the profit which he must earn on each ton of output. These additional charges go far to nullify—and indeed may do so completely—the “natural” protection which it is sometimes contended the Indian manufacturer receives in the freight charges on imported steel.

7. We have shown that the efficiency of the operations at Jamshedpur cannot be compared with that in other countries merely by the tabulation of costs under items apparently similar. Any comparative statement we could compile would be misleading unless it were accompanied by an explanation, usually very technical, for almost every item. For these reasons we have not thought it desir-

able to present such a statement. But in consultation with our technical adviser, Mr. Mather, we have considered all the information we could obtain about costs in other countries, and in forming our opinion as to the efficiency of the technical management of the Jamshedpur works we have taken this information into account. It is not only costs, however, which have occupied our attention. We have also, wherever possible, endeavoured to compare the operation methods at Jamshedpur with those in other countries, and especially the rate of output of the steel furnaces and the fuel consumption. Comparisons on this basis also necessitate allowances for varying conditions, but they can be made with greater accuracy, since more knowledge is available about the processes employed in other countries and their results than about costs.

8. We have not found that Mr. Homi's evidence supplied what was needed in this respect. The comparisons which he made were entirely with American practice, but in most cases he was unable to give us that detailed information about the working conditions in the American plants used as examples which alone would have enabled a satisfactory comparison to be made. And where his own statements showed definitely that the conditions were not directly comparable, he failed to appreciate the importance of the difference. Mr. Homi's acquaintance with the methods of manufacture of steel is too limited and superficial to justify us in attaching weight to his opinions. Throughout his evidence he displayed a pronounced tendency to ignore essential difficulties in India, to quote as typical of the practice at Jamshedpur incidents which occurred several years ago or details of procedure which have long been abandoned, and to use for his American basis results obtained in plants where the conditions are unusually favourable. Only by detailed criticism could the substratum of useful matter in his representation be reached, but the yield of properly substantiated facts was small, and we found that most of them related to subjects which we had already discussed with the Steel Company at our first meetings in Jamshedpur, or which we had taken up in the interval.

9. There is one important aspect of Mr. Homi's evidence to which we had to give special attention. In Board's decision on Mr. Homi's written statement. his written representation he gave detailed figures for the costs of steel manufacture not only in America, but also in the works of the Tata Iron and Steel Company at Jamshedpur. It appeared certain that the latter figures could have been obtained only if Mr. Homi had access to the cost sheets and other confidential records of the Company: but in oral examination, while he admitted that he had in his possession complete cost and practice charts of the Company, he declined to say how he had got them. We considered carefully how far, if at all, we could place on our record information which the witness tendering it was not entitled to possess, and our decision was communicated to Mr. Homi in a

statement read by the President at a public sitting of the Board on the 17th November. It was in the following terms:—

“The Tariff Board have carefully considered how they should deal with the written statement you have submitted. That statement contains many figures relating to the operations of the Tata Iron and Steel Company, which were evidently obtained from copies of the complete cost and practice charts of the Company from 1912 onwards. These documents are in your possession although the Company treats them as confidential, and you have declined to inform the Board from what source you obtained them. The only inference the Board can draw is that you obtained them from servants of the Company whose duty it was to withhold the information.

“The Board feel that it would be contrary to the public interest if they were to accept as evidence, and give publicity to, information apparently obtained by methods open to the strongest objection. They must, therefore, decline at this stage to bring the written statement as it stands upon the record, or to proceed with your examination upon that basis. At the same time they recognize that there are a number of paragraphs in the written statement which are not open to objection on the ground stated. They have decided to limit their oral examination to those portions of the statement and they will resume the examination for this purpose at 3 P.M. on Monday, the 19th November, if the date and hour are convenient to you:

“The portions of the written statement which it will be necessary to exclude deal with many questions which have already received, and will continue to receive, the attention of the Board. It is their duty to acquaint themselves to the best of their ability with all the relevant facts. But they cannot take as the basis of their investigation information irregularly obtained. To do so would be to acquiesce in methods of which the Board emphatically disapprove.

“The Board will of course ask the Tata Iron and Steel Company for all information that appears to them necessary for the purposes, of their enquiry, and the Company have at all times expressed their willingness to give all the information that might be asked for.”

10. We have thought it right to reproduce our decision in full

Principle underlying the decision.

because it lays down the general principle which in such matters will regulate our procedure. The danger of accepting as evidence in-

formation which the witness cannot authenticate is obvious, and we had no hesitation in excising from the record the figures relating to the Tata Iron and Steel Company which Mr. Homi had inserted in his written statement. When we visited Jamshedpur in December the Company itself supplied us with correct figures in place of those furnished by Mr. Homi, but we did not consider it necessary to reproduce them in the record. Mr. Homi's written statement does not furnish a satisfactory basis for examining the works costs of the Tata Iron and Steel Company, and for this reason we have not referred to his evidence in our First Report.

CHAPTER II.

The Locomotive Building Industry.

11. On the 30th September 1921, the Government of India published a communiqué in which *inter alia* the Peninsular Locomotive Company. following statements occur:—

“ In pursuance of their express policy of making India as far as possible independent of outside sources in the supply of materials for Railways, the Government of India have had under consideration the question of the construction of locomotives in India and they are now in a position to give a general undertaking that tenders will be invited annually in India for all the railway locomotives and locomotive boilers required by Government during the 12 years commencing with 1923. * * * It is estimated that the average annual requirements of Government will be 160 locomotive engines and 160 additional boilers during 1923 and 1924, and thereafter 400 locomotives and 400 additional boilers. * * * Firms interested in the above announcement are invited to apply for further information, either to the Secretary, Railway Department, India, or to the High Commissioner for India, London.”

On the 6th of December 1921 the Peninsular Locomotive Company, Limited, was incorporated in India. This is the only firm interested in the manufacture of locomotives in this country which has applied to us for protection of the industry, or, in the alternative, to render it assistance in some other form during its initial stages. The Company has a subscribed capital of Rs. 60 lakhs, all in ordinary shares. Its Board of Directors consists of seven members, of whom four are Indians. Its Chairman and Managing Director is Mr. Herbert Langham Reed, who is Chairman of a well-known English firm of locomotive manufacturers, Messrs. Kerr, Stuart and Company, Limited.

12. Though the Company was incorporated nearly two years ago, it has not commenced operations and its Equipment of the works, which are to have a capacity of about 200 locomotives per year, have not been completed. Most of the buildings have, however, been erected on a site at Jamshedpur leased from the Tata Iron and Steel Company, and we are informed that about Rs. 30 lakhs have been spent on these buildings and the necessary machinery, equipment and accessories. These are already on the site, and we have been told that within two or three months of obtaining the necessary order for locomotives the Company would be in a position to commence operations. Mr. Reed further states that arrangements

have also been made to secure the services of such European experts and foremen as may be necessary.

13. The industry, in our opinion, has strong claims to temporary national assistance. The works at Jamshedpur will be under the management of a firm of British manufacturers who have considerable experience in the manufacture of locomotives, and there is therefore every reason to believe that the works will be under efficient control. The industry is very valuable from the national point of view. Apart from its importance as affecting the question of national defence, it is an industry which gives ample opportunities for the purpose of training Indians in mechanical engineering, and if India is to make itself independent, as far as possible, in the supply of its Railway requirements, it is essential that in its industrial organisation it should possess a well-established locomotive industry. With regard to the supply of labour also, it is favourably situated, for it cannot be regarded as an industry in which all labour has to be specially trained. There are many engineering works, Railway workshops and factories where labour of the kind required in this industry is available at reasonable cost and in sufficient quantity. With regard to raw materials, it is estimated that about 50 per cent. of the total quantity of raw materials required in the manufacture of a locomotive can be obtained in India, either from the Tata Iron and Steel Company, Limited, or from other local firms engaged in the manufacture of iron or steel products, especially castings.

14. We consider that the establishment of the manufacture of locomotives in India is desirable both on national grounds and because of its importance to the development of the steel industry. But so long as the prices of imported locomotives remain at the low level to which they have fallen during the last two years, it seems certain that Government assistance would be required. Mr. Reed estimated that, at the outset, the cost of a locomotive manufactured in India would exceed by about £2,000 the cost of an imported locomotive erected and ready to run.* Since no locomotives have yet been constructed at Jamshedpur, it is impossible to be sure whether the figure given is a reasonable one, but after examining the details of the estimate as given by Mr. Reed, we are inclined

* The prices paid by the Railway Board for 2-8-0 broad-gauge locomotives were—

1910-14 (average)	.	.	£ 4,116	f.o.b. English port.
1920	.	.	£13,633	f.o.b. English port.
1922	.	.	£ 5,120	f.o.b. English port.

The extra cost of freight, etc., and of erection in India would be about £600 in 1922.

Mr. Reed estimates that the present British price of this locomotive would be about £6,400 f.o.b. if a normal profit were to be obtained.

to think that some of the items have been put too high. Even if the protection required, however, was a good deal less than £2,000 a locomotive, it would still be a substantial sum, though probably not greater than has been found necessary for the protection of the locomotive industry in other countries such as Australia, where the import duty is $27\frac{1}{2}$ per cent. *ad valorem*, and Canada, where it is $22\frac{1}{2}$ per cent. The higher duties on imports of rolled steel which we have proposed would have increased the cost of each locomotive by a few hundred rupees only. We believe that we should have found it possible to make recommendations for the encouragement of this industry but for a complete change in the circumstances which has occurred since 1921.

15. The Fiscal Commission laid down several conditions which were to be fulfilled by any industry claiming Fiscal Commission's condition as to "large home market" not fulfilled. protection. One of them was that the industry must possess "a large home market" for its products. The application of this criterion may occasionally present difficulties, but, in our opinion, it must mean the existence of a demand for the product in a quantity sufficiently large to make its production economically practicable. To put it in another way, the implication is that no industry ought to be protected unless its output is on a scale sufficiently big to make it possible for it to bring down its cost of production to the level at which it can, without national assistance, compete eventually with the foreign manufacture. In the case of the locomotive industry, it has been stated to us by Mr. Reed that production costs would not be economical if the capacity of the works was much less than 200 locomotives per year. It would follow from this that, if the industry is to be protected and is eventually to succeed, its market must be able to absorb at least that number. If the Company had started their operations a year or two ago, it would at that time unquestionably have had such a market, for it was definitely stated in the communiqué to which we have referred that the annual requirements of Government would be 160 locomotives and 160 additional boilers during each of the years 1923 and 1924, and 400 locomotives and 400 additional boilers a year thereafter. If the position had not changed since the date of that communiqué, the requirements of Government would thus have given enough work to two plants operating simultaneously, each of them turning out 200 locomotives a year. In the requirements of the Railways not owned by Government there was the possibility of some further market. Unfortunately, however, the position is now completely changed. Mr. Hindley, giving evidence before us for the Railway Board, has stated that the requirements of the Railways during 1924-25 would be only 60 locomotives, and that it was doubtful whether the requirements in any one of the next five years would be as high as 100 locomotives. The recommendations of the Inchcape Committee had led to a full review of the requirements of the Indian Railways in the matter of locomotives, with the result that means had been devised for utilizing

to better advantage the locomotives the Railways already had, so that the need for new locomotives was diminished. The projected electrification of the Railways in the neighbourhood of Bombay would lead to a further economy, for about 300 steam locomotives would be set free for use elsewhere.

16. If the requirements during the next five years of all the Railways owned by Government will not exceed 100 locomotives in any one year, it is clear that no protection, or assistance in any other form, can be recommended by us in respect of this industry, with due regard to the immediate or ultimate good of the country from the economic point of view. When the demand is so small there is no "large market" in the sense in which that phrase was used by the Fiscal Commission, nor is there the kind of market upon which the industry can be built up. As Mr. Reed himself has admitted, the economical production of locomotives requires that the unit of production must be about 200 locomotives per year. The output of Messrs. Kerr, Stuart and Company, the firm of which Mr. Reed is the Managing Director is of about this magnitude, and it does not rank as one of the largest or most important in the industry in Great Britain. Owing to the restriction of the Indian market, no economy in the cost of production, as the result of manufacture and repetition work on a large scale, will be possible. The overhead charges alone would so load the industry that the manufacture of locomotives could not be made a commercial proposition. On this account the cost to the country of any protective measures taken would be very heavy, and the results attained would not be commensurate. Before we ask the country to make the heavy sacrifice which is involved in the encouragement of the industry, we must be satisfied in our own minds that the sacrifice will be of a temporary nature and that in the end the country will thereby secure to itself a real advantage in the establishment within itself of an industry of immense national importance. We are not satisfied that this will be the case. The burden upon the community will be heavy and continue to be so indefinitely and until the domestic demand approximates to the output of the smallest unit which can be economically and efficiently operated.

17. There is another aspect of the case which cannot be ignored.

Unless the requirements of the Indian Railways consist of not more than one or two types of locomotives, it is doubtful whether, even if the whole order were placed with the Peninsular Locomotive Company, it could be executed without excessive cost, for the larger the variety of the types, the greater is the cost of production. To expect the Railways to stereotype a particular design, merely in order to supply work to an indigenous enterprise, is to ask for an impossibility having regard to the varying circumstances of traffic in such a large system as that of India.

18. For the reasons which we have given we are unable to make any recommendations for the grant of protection to the locomotive building industry. We consider it desirable on national grounds that the industry should be established in India, and we believe that this could eventually be done, provided substantial assistance were given by Government in the earlier years. But the existence of a sufficient market for locomotives in India is an indispensable preliminary condition, and at present this condition is not satisfied. If protection were given now, the country would carry a heavy burden during the next five years, and at the end of that period the progress made would be insufficient to justify the sacrifice.

19. In the communiqué to which we have referred a definite statement was made that the Government of India were "in a position to give a general undertaking that tenders will be invited annually in India for all the Railway locomotives and locomotive boilers required by Government during the 12 years commencing with 1923." It was further stated that the requirements of Government alone would be 400 locomotives a year from 1925 onwards. A communiqué so generally worded could not but be construed as an invitation by the Government to commercial enterprise to come forward and establish the manufacture of locomotives in this country, and Mr. Reed, in giving evidence for the Peninsular Locomotive Company, stated that this communiqué was "the origin of the company." Our attention was, however, drawn by Mr. Hindley to passages in the records of the Railway Board which suggested that, even before the issue of the communiqué, the promoters of the Company were prepared to start the construction of locomotives in this country without claiming any special treatment or guarantee. That may very well be the case. But it does not follow that, if the communiqué had not been issued, they would have been able to raise the capital required, or that the Company would have been floated successfully. The important fact is that the Company was not registered until more than two months after the communiqué was published, and, in these circumstances, part at least of the share capital was probably subscribed in view of the statements it contained. The Peninsular Locomotive Company is now placed in the unfortunate position that the demand for its products, which it was led to believe was certain, has ceased to exist. We recognize that the need for economy in Railway administration is paramount, and that the Railway authorities cannot be expected to purchase locomotives which they do not need. But the complete falsification of the forecast made by the Railway authorities little more than two years ago cannot but affect adversely the prospect of raising capital for Railway industries in India, and the position in which the Peninsular Locomotive Company has been placed deserves, and will no doubt receive, the special consideration of the Government of India.

CHAPTER III.

Steel Castings.

20. The manufacture of steel castings is carried on in some of the Railway workshops in India and also by three private firms. The works of the Kirtyanand Iron and Steel Works, Limited, are situated in the coalfields about $1\frac{1}{2}$ miles from Rupnarainpur on the East Indian Railway, and those of the Hukumchand Electric Steel Company at Ballygunge in Calcutta. Both these firms make castings for sale. The third firm Messrs. Fairbairn, Lawson, Combe and Barbour (India), Limited, is engaged in the manufacture of jute machinery, and has erected a plant at its works at Sarsatala, Jamgaon—near Asansol—primarily in order to make the castings required for such machinery, but also for sale. Applications for protection have been received from the first two firms but not from the third. The Kirtyanand Iron and Steel Works, Limited, commenced to manufacture in February 1922. At the end of that year the paid-up share capital was about Rs. $7\frac{1}{2}$ lakhs, and debentures for Rs. 4 lakhs had also been issued. The total block account, less depreciation, was then a little over Rs. 10 lakhs. The Hukumchand Electric Steel Company began to manufacture in July 1922. No complete balance sheet had been prepared by this Company at the time their case was presented to us, but we were informed that the concern is privately owned by Sir Sarupchand Hukumchand and Company, and that the capital expenditure incurred on land, buildings, and machinery, etc., was about Rs. 10 lakhs.

21. Steel castings, like iron and brass castings, are made by pouring the molten metal into sand moulds which have been given the forms which it is desired the castings should take. There are several processes by which the molten steel can be prepared and the choice between them depends on the total output of the works, on the size and shape of the castings likely to constitute the bulk of the output, on the quality required and on the raw materials available. The Kirtyanand Iron and Steel Works, Limited, have adopted a "converter" process. Molten pig iron is first poured into a converter, and air under fairly high pressure is then blown on to its surface. The impurities present in the metal are thus removed. If the quality of the castings is to be satisfactory, the pig iron used for this process must contain very little phosphorus, and for this reason Indian pig iron is not suitable. Only imported pig iron is used by the Kirtyanand Iron and Steel Works, Limited. At the Hukumchand Electric Steel Works an electric process has been preferred. The raw material, light steel scrap,

is charged into a small furnace with a 'basic' lining. Large carbon electrodes pass down through the roof of the furnace, and by the passage of an electric current an arc is maintained inside the furnace. The heat of this arc melts the scrap, and when the molten metal has been suitably refined—chiefly by means of lime—it is transferred from the furnace to the sand moulds. After the castings made by either process have been taken from the sand moulds, they are cleaned and usually require annealing, *i.e.*, heating slowly in a special furnace to a dull red heat and then cooling slowly. Most castings also require a small amount of machining, for the accurate adjustment of one or more of the dimensions, before they pass into use.

22. It is desirable that we should emphasise the fundamental differences between the manufacture in India of rolled steel and of steel castings. These differences exist in the nature of the raw materials employed, in the methods of manufacture, and in the purposes for which the finished products can be employed. Rolled steel is made at Jamshedpur entirely from Indian pig iron; steel castings are made either from imported pig iron or from steel scrap. In the manufacture of rolled steel the molten metal is poured into ingot moulds which are all of much the same form, and it is in the rolling mills that the steel is given the shape which renders it suitable for the work in which it is to be used. In the manufacture of steel castings, the molten metal is poured at once into sand moulds which have already been given the shape for which the casting is to be used. Rolled steel shapes such as beams, angles and plates can be adapted for many different uses by fabrication; the steel casting has from the first been given a special shape for a special purpose and can be used only for that purpose. This third difference is of great importance. The steel casting is always and essentially a part of something else. It may for example be a part of a Railway wagon or locomotive, or it may be a constituent part of a machine. The prospects of the industry, therefore, necessarily depend on the growth and development of other industries. Unless the manufacture of Railway wagons, and to a certain extent of machinery, is established in India, the manufacture of steel castings is not likely to succeed.

23. In their original representation of 4th September 1923 the Kirtyanand Iron and Steel Works, Limited, asked that a duty of 33½ per cent. should be imposed on all steel castings imported from abroad, and apparently intended (though this was not explicitly stated) that the same rate of duty should be applied to steel castings coming in as spare parts of machinery or as railway material. As an alternative, the Company suggested the grant of a "suitable bounty." The request made on behalf of the Hukumchand Electric Steel Works was that their products should receive "exactly the same treatment in the matter of a protective tariff

as the Tata Company's." The oral examination of the witnesses made it clear that both firms were finding it difficult to sell their products in the face of competition from abroad, but that the amount of assistance they asked for had been determined by the claim made on behalf of the Tata Iron and Steel Company, and not by any exact calculation of costs and prices.

24. If Indian pig iron were well adapted for the manufacture of steel castings, the industry would start with First condition laid down by the Fiscal Commission. a substantial natural advantage, because Indian pig iron is relatively cheap. As we have already explained, however, Indian pig iron contains too much phosphorus, and the castings made from it by the converter process are not satisfactory in quality. In so far as it is necessary to use imported pig iron for the manufacture of steel castings, we do not think it can be shown that India possesses any natural advantage, and it is doubtful whether the industry could ever hold its own without protection. The use of imported raw material also does much to invalidate the argument which might be founded on the importance of the industry from the point of view of national security. The weight of the pig iron used is nearly 50 per cent. greater than the weight of the steel castings produced, and in a national emergency, when sea communications were severely restricted, it would be easier to import the castings than the raw material. If, therefore, the claim to protection can be made good at all, it must be in favour of the alternative process which uses steel scrap as its raw material.

25. The evidence we have taken makes it clear, we think, that in the Calcutta area steel scrap is likely to be Sufficiently of the supplies of steel scrap. available in sufficient quantities to supply the needs of the steel casting industry. The East Indian Railway Company informed us that the quantity of steel scrap likely to be available for disposal annually was from 3,000 to 5,000 tons, while the Bengal Nagpur Railway Company estimated that they would put on the market about 700 tons annually. Apart from the Railways, in a large industrial district such as Calcutta, a considerable amount of steel scrap is produced, and some of it is unusable at present except by the steel making process. Up till now the Hukumchand Electric Steel Company has been able to purchase the steel scrap it requires at an average price of Rs. 30 a ton, which is lower than the prices prevailing for similar material in other countries. Its output, however, has not exceeded 50 tons a month, whereas the eventual output may be five times as great. It is possible that, with an increasing demand for scrap, the prices might rise, but so far as can be judged at present, the industry does possess an advantage as regards raw materials.

26. In respect of labour the industry is at no special disadvantage. Iron castings have been made in India Labour and Power. for a great many years, and it is not difficult, therefore, to obtain workmen who have already acquired a good deal of experience and can readily learn such special processes as are needed in steel casting. The cost of electric power is of

course an important factor in production costs, and although the rates at which power is supplied by the Calcutta Electric Supply Corporation at present are not as low as in specially favoured districts in other countries, the difference between the cost to the Indian producer and the corresponding cost to his competitors in other countries is not likely to be very great. On the whole, the prospects of the industry are not unfavourable, but there is one element of uncertainty, *viz.* :—the extent of the probable demand for steel castings.

27. We have found it very difficult to estimate even approximately the probable annual demand for steel castings in India. The imports are not shown separately in the Trade Returns, and in the nature of the case it is hardly possible that they should be. As we have pointed out in paragraph 22, the steel casting is almost invariably a part of something else, and would be classified as a component part of a locomotive or a Railway wagon or as machinery. The figures supplied to us by the principal Company-worked Railways showed that in 1922-23 they imported nearly 600 tons of steel castings separately and about 3,000 tons as parts of rolling stock. There are great and unexplained differences between the figures given by the various Railway administrations, and we are doubtful whether the Railway demand can be accurately determined on this basis. The figures suggest, however, that apart from the steel castings produced in the workshops of the Bombay, Baroda and Central India Railway at Ajmere (800 tons), and in the East Indian Railway workshops at Jamalpur (200 tons) the annual consumption of steel castings by all the Railways in India (excluding those imported as parts of complete wagons and locomotives) is not less than 1,000 tons and may be more.

28. The Hukumchand Electric Steel Company suggested to us that the annual Railway demand for steel axle-boxes required for replacements would of itself more than suffice to keep their works fully employed. The figures supplied by the Railway Companies do not, however, support this theory. Much must depend, moreover, on the policy followed as regards the replacement of cast iron axle-boxes by steel axle-boxes. If the Railways generally were to make this change, there would probably be a very large demand for several years. But once the use of steel axle-boxes had become universal, it is not clear what the annual consumption would be. One of the advantages claimed for the steel axle-box is its greater durability, and the annual demand during the period of replacement is no index of the probable demand once the process of replacement is complete.

29. The prospects of the steel casting industry must obviously be affected by the success attained in the manufacture of Railway wagons in India. If that manufacture were once firmly established, it would create a steady demand for steel

castings. But the quantity required is only 7 cwts. per wagon, in the case of the A-I covered broad-gauge wagon (the only type for which we have details), so that for every 1,000 such wagons, the total quantity of castings needed is only 350 tons. The full capacity of the Kirtranand Iron and Steel Works is about 200 tons a month, and of the Hukumchand Electric Steel Company about 250 tons a month, and unless the output of the Indian wagon building firms expands much more rapidly than is expected, their requirements will not go far to keep the steel foundries occupied. The establishment of locomotive building in India would provide an important market for steel castings, but that industry is not likely to start without Government assistance at the outset, and for the reasons given in Chapter II we have been unable to recommend that it should be protected.

30. Apart from those required for Railway rolling stock, the most important classes of steel castings which have been brought to our notice are colliery tub wheels, bridge bearings, and certain parts of machinery. We have no data from which we can estimate even approximately the probable demand for steel castings for these purposes, though probably the colliery tub wheels are the most important. So far as machinery is concerned, much must depend on the policy finally adopted by the Government of India as regards encouraging the manufacture of machinery in India. So long as the steel casting works are dependent on replacement orders for particular parts of machinery, their costs are bound to be high because it is only on repetition work that they can hope for cheap production.

31. If it were established that the steel casting industry deserved support from Government, it would still be difficult to decide by what means protection should be given. The imposition of protective duties at once raises the problem whether a higher duty can be imposed on the component parts of rolling stock or machinery than on the complete wagon or machine, and, if so, whether this higher duty should be enforced only when the parts are imported separately. We have recommended in our Second Report that the manufacture of Railway wagons should be fostered by the grant of bounties. It may be that a similar method would be best in the case of those castings which are needed for wagons. As regards those castings which are component parts of machinery, it would hardly be possible for us to make recommendations at all, until we had reviewed all the questions connected with the manufacture of machinery in India. But before we can satisfy ourselves whether protection is necessary or what the amount should be, the extent of the probable demand for steel castings in India must clearly be determined.

32. So far as we have been able to ascertain the facts at present, it is not clear that the annual demand for steel castings in the area which can be commanded from Calcutta is sufficient to keep

even one of the steel foundries fully employed. The complete figures from the Railway administrations did not reach us until a late stage in our enquiry, and it was not until we reviewed all the evidence that we realised how important this factor was likely to prove. The output of steel castings must clearly be limited by the demand, and at the same time the cost of production is largely determined by the output. Unless some estimate can be formed of the probable output, it is hardly possible to determine the cost of production, or to assess the amount of protection needed. For this reason we are unable to make any general recommendations at present. One class of steel castings, however, will benefit from a proposal which we have made in our Second Report, for colliery tub wheels will become subject to the import duty of 25 per cent. which has been proposed for the tubs.

CHAPTER IV.

Enamelled Ware.

33. The manufacture of enamelled ware in India is of very recent growth. Up to 1914 the bulk of the imports and raw materials were obtained from the Continent of Europe, but since the war supplies have been drawn chiefly from Japan. The import figures are—

	Value of all imports.	Value of imports into Calcutta.
	Rs. lakhs.	Rs. lakhs.
Average of the three years 1911-12 to 1913-14	27.2	6.7
1920-21	42.9	9.8
1921-22	20.1	6.6
1922-23	23.6	5.7
1923-24 (10 months' figures multiplied by 6/5)	29.7	

The raw materials required by the industry are thin steel sheets with a smooth surface and the various substances used in preparing the enamel glaze. Steel sheets are already manufactured at Jamshedpur by the Tinsplate Company, but not for sale, the whole output being converted into tinsplate. The Tata Iron and Steel Company will commence the manufacture of black sheets in September, 1924, and are under contract to supply sheets suitable for enamelling to a Company—Enamelled Ironware, Limited—which has been established at Jamshedpur. Most of the materials required for the glaze have to be imported. The process of manufacture is comparatively simple and does not require an expensive or elaborate equipment. The industry can, therefore, be carried on by firms with a low capitalisation, working on a limited scale.

34. We have received representations from four firms who are engaged in, interested in the manufacture of enamelled the production of ware. Three of them—the Bengal Enamel enamelled ware. Works, Limited, the Bengal Enamel and Stamping Works, and the Pioneer Enamel Works, Limited—have established their works at or near Calcutta; the fourth—Enamelled Ironware, Limited—is located at Jamshedpur. This last Company was about to commence manufacture when we visited Jamshedpur in August 1923, but no information has since been received as to the progress made. When we took the evidence of the other three firms in September and October 1923, they were manufacturing on

a small scale only, and had not reached anything like full production. The capitalisation of the four Companies is as follows:—

	Rs. lakhs.
Enamelled Ironware, Limited .	9
Bengal Enamel Works, Limited	2 (Includes working capital.)
Bengal Enamel and Stamping Works.	3 (This amount has actually been spent on the equipment of the factory.)
Pioneer Enamel and Iron Works, Limited.	3 (Rs. 60,000 is the sum actually raised and spent.)

It will be seen that the capitalisation of the Jamshedpur Company exceeds that of the other three put together, but they have given no evidence as to their probable output. The other three firms have given the following estimates of their requirements of steel sheets:—

Bengal Enamel Works, Limited	500 tons in the near future and 1,000 tons eventually.
Bengal Enamel and Stamping Works.	About 240 tons.
Pioneer Enamel and Iron Works, Limited.	100 tons at present and 1,000 tons eventually.

35. It would be a mistake to attach undue importance to the estimates which the firms have given of their probable output. They have not yet had sufficient experience to forecast accurately the amount of work they will be able to undertake, and their anticipations may be wide of the mark. In particular their output must necessarily be limited by the demand for enamelled ware in India. All the three Calcutta firms estimate that the cost of the steel sheets will be about a third of the cost of the finished goods, and the cost of sheets suitable for enamelling appears to be about Rs. 350 a ton. On that basis the consumption of 500 tons of steel sheets means an output the value of which will exceed Rs. 5 lakhs, or nearly equal to the total imports at Calcutta in 1922-23. Unless the demand increases substantially, it does not seem possible that all the firms can attain the output they hope for.

36. The Tata Iron and Steel Company has made a contract with Enamelled Ironware, Limited, by which for the first five years the price paid for steel sheets is the mean of the English and American prices for similar materials, *plus* ten shillings per ton. This Company will not be affected at the outset, therefore, by any additional duty which may be placed on raw steel. The other three Companies submitted representations urging that they would be seriously prejudiced if the import duty on steel sheets were raised.

to 33½ per cent., as proposed by the Tata Iron and Steel Company. They contended that that Company would not be able for several years to produce steel sheets suitable for enamelling and asked that they might be allowed to import their sheets free of duty to enable them to overcome the difficulty of the first few years' working. The Bengal Enamel Works, Limited, specifically asked that they might be allowed also to import free of duty the chemicals required for the enamel glaze, and the other firms, in oral examination, concurred in this request. All three firms spoke of a heavy fall in the prices of enamelled ware and of keen competition both from Germany and from Japan, but all three were opposed to an increase in the present import duty of 15 per cent. *ad valorem*. They explained that in India enamelled ware was used for the same purposes for which vessels made of brass and aluminium were used, and they apprehended that, if the price were substantially increased, the demand for enamelled ware would at once decline.

37. The prospects of the enamelled ware industry are not, we think, unfavourable, if the initial difficulties are once overcome, and it is certainly desirable that the manufacture should be established in India. It affords an opening to the small capitalist and the technical processes are not of great difficulty, whereas most of the industries which use steel as their raw material involve the raising of a large amount of capital and the employment of highly trained experts. We think that some assistance from Government is necessary, but the precise measures to be taken require consideration.

38. It seems to be clear, for the reasons given by the firms themselves, that nothing would be gained by imposing a higher duty on imported enamelled ware. The market is not a large one, and, if it were further restricted, the prospects of the industry would be prejudiced and not improved. Nor are we able to support the proposal that the firms should be allowed to import the steel sheets they require free of duty. The practical difficulties would be great, for no means has been suggested by which the Customs officers could discriminate between the special qualities of sheet which are suitable for enamelling and other sheets. An alternative arrangement might be possible by which the firms would receive a rebate of Customs duties paid by them on imported sheets in proportion to their output of finished goods. It would, however, be wholly inconsistent with protection for the steel industry to exempt from duty sheets of the kind which is likely to be produced at Jamshedpur. The Tata Iron and Steel Company are under contract with Enamelled Ironware, Limited, to supply them with sheet suitable for enamelling, and the doubt that has been expressed as to their ability to do this is not, we think, well founded. The Tinsplate Company are already manufacturing from steel made at Jamshedpur sheets of a similar quality to the kind required, and there is no reason why the Tata Iron and Steel Company should not be equally successful. If the

cost of the steel sheet is one-third of the value of the finished goods; the present ten per cent. duty is approximately 3 per cent. of the same value. The increase of the duty to 15 per cent. (as we have proposed in our First Report) would then mean an increase in the cost of production of $1\frac{1}{3}$ per cent. It is quite possible, however, that the Tata Iron and Steel Company may be able to supply the Calcutta firms with the sheets they require at a price not higher than they are paying at present. It has been suggested that they should give them the same terms which they have already granted to Enamelled Ironware, Limited, and the Tata Iron and Steel Company have promised to consider the matter. But apart altogether from a special arrangement of that kind, it is in the interests of the steel industry that the manufacture of enamelled ware in India should continue, and if an increase in the price were likely to endanger its existence, the steel manufacturer would no doubt take that fact into account.

39. The Bengal Enamel Works, Limited, has supplied us with a list of the raw materials required for the manufacture of enamel glaze, and an estimate of the quantity required on the basis of an annual consumption of 450 tons of sheet. The most important items in point of value are:—

	Cost including import duty.
	Rs.
Borax and boracic acid	59,500
Cryolite	31,500
Cobalt Oxide	31,175
Antimony	12,100
Felspar, ground	11,200
Total	1,45,475
Other materials	29,625
GRAND TOTAL	1,75,100

The first five items are at present subject to an import duty of 15 per cent. If it were possible to admit these materials free of duty, the consequent reduction in the cost of production of enamelled ware would much more than counterbalance the increase in the duty on black sheets. It is on these lines, we consider, that assistance can best be given to the industry, and the removal of the duty on raw materials which are not produced in the country is in all respects consonant with a fiscal system which aims at the encouragement of industry by discriminating protection. We understand that several applications have already reached the Government of India from other industries in which proposals either for the removal of the duties on imported raw materials, or

for exemption from such duties, have been made. It seems to us desirable that, as far as possible, these proposals should be considered simultaneously. The general principles which should regulate the grant of concessions require careful examination, and since a sacrifice of revenue may be involved, the relative urgency of the various claims may have to be settled. For this reason we have deferred making definite recommendations in favour of the enamelled ware industry, though we think that its claims to assistance of this kind are strong.

CHAPTER V.

Conclusion.

40. We desire to record our indebtedness to those commercial bodies and firms, and also to those private persons who submitted written statements to the Board or gave oral evidence, to the Provincial Governments who supplied us with much useful information, and to the principal Railway Companies and Port Trusts who sent detailed replies to our questionnaires. In many cases witnesses were asked to supplement the information originally given by further statements, and our requests were invariably and most courteously complied with. As was natural, our demands fell heaviest on the claimants for protection, and particularly on the Tata Iron and Steel Company, but we should also acknowledge specially the assistance given by the Indian Engineering Association and some of the engineering firms, and by the Railway Companies. The compilation of the figures which we asked for involved the expenditure of much time and labour, and but for the assistance we received, we should have found it impossible to carry through our investigations. We are particularly indebted to those firms (see Statement VI, Annexure A) who permitted us to visit their works, and to the gentlemen who took us round on the occasion of these visits and explained the processes of manufacture. These visits formed a most valuable part of our enquiry and enabled us to appreciate much more clearly the written and oral evidence with which we had to deal.

41. There is one aspect of our proceedings to which we draw special attention. In paragraph 303 of their Report, the Fiscal Commission laid stress on the importance of publicity to inspire confidence and remove the possibility of suspicion that recommendations are based on anything but the public interest. It is on this principle that we have acted throughout. The Tata Iron and Steel Company were unwilling at the outset to make public their pig iron costs, because the information disclosed might conceivably be of use to their competitors in India. Eventually, however, they informed us that the whole of the evidence they had given might be published. In the case of other firms also we were able to overcome the apprehensions which they originally felt, and secured their consent to the publication of the greater part, if not the whole, of the evidence which at first had been given confidentially. We have lost no opportunity of emphasising the value of publicity, and it is our firm conviction that, as far as possible, evidence should be taken publicly. At the same time, however, there are occasions when

the choice lies between receiving evidence confidentially and not obtaining it at all, and in such cases our practice has been to take evidence *in camera* and then to secure the consent of the witness to the publication of as much of it as possible. It is the publication of details of the cost of production which most commonly gives rise to difficulties. The Tata Iron and Steel Company was eventually able to agree to the publication of all the evidence tendered on its behalf, because it has no competitors in India; but this is an exceptional case, and, to take one example, some of the engineering firms were naturally unwilling at a time of intense competition to place at the disposal of rival firms the details of their manufacturing costs. This difficulty is bound to recur during the course of our enquiries and cannot be ignored. Where protection is claimed on behalf of an industry in which several firms are engaged, we do not think it will be possible to take the whole of the evidence in public, for in that case indispensable information would not be obtained at all. The Fiscal Commission itself recognized that the whole investigation might not be conducted in public. Each case must, we consider, be dealt with on its merits, but our aim would invariably be to secure publicity wherever possible.

42. To assist us in our enquiry into the steel industry, Mr. R. Mather, the Government Metallurgical Inspector at Jamshedpur; was appointed as our technical adviser, and joined us at Jamshedpur on his return from leave on August 20th 1923. We desire to record our deep appreciation of the very valuable services which Mr. Mather has rendered. The difficulties of a very arduous and complicated enquiry would have been doubled, had we not been able to rely in all technical matters on his accurate knowledge, clear judgment and indefatigable energy. At all stages of our work, whether in the examination of witnesses, the sifting of the evidence recorded, the formulation of proposals or the detailed working out of the general principles we had accepted, Mr. Mather was ready to help us not only with advice and criticism, but also with the closest and most cordial co-operation. For the recommendations made and the opinions expressed in our Reports we are, of course, solely responsible, but in so far as we have succeeded in presenting our conclusions regarding the technical aspects of the steel industry in a clear and coherent form for the consideration of the Government of India and the Legislature, it is to our adviser that in large measure the credit is due.

43. The post of Secretary to the Board was at first filled by Rai Bahadur Surendra Nath Banerji, Assistant Secretary to the Government of India in the Commerce Department. In November he was compelled by illness to vacate the appointment and his place was then taken by Mr. G. C. F. Ramsden, I.C.S., of the Central Provinces Commission. We are indebted to both officers for the careful and efficient manner in which the Board's work has been carried on. Our enquiries involved a heavy strain

The Board's Technical Adviser.

The Board's Secretarial and clerical establishment.

on the clerical and reporting staff of the Board, who had frequently to work for very long hours in order to keep abreast of the evidence. We desire to acknowledge the cheerful and willing spirit in which they met the demands made upon them and the good work done by them.

G. RAINY—*President.*

V. G. KALE.

P. P. GINWALA.

G. C. F. RAMSDEN—*Secretary.*

March 15th, 1924.

ANNEXURE A.

Account of the Board's Proceedings.

The Resolution of the Government of India appointing the Tariff Board was published on the 10th July 1923 and the members took charge of their duties on the following dates:—

- (1) The President 5th July 1923.
- (2) Mr. P. P. Ginwala . . . 5th July 1923.
- (3) Professor V. G. Kule . . . 14th July 1923.

2. On the 17th July the following communiqué was issued by the Board inviting expressions of opinion on the proposal to grant protection to the Steel industry.

"The Tariff Board have been appointed to advise the Government of India as to the means by which effect should be given to the policy accepted by the Government of India and approved by the Legislative Assembly of adjusting the fiscal system of the country so as to foster the development of industries. In the Resolution of the Government of India in the Department of Commerce, No. 3748, dated 10th July 1923, the Board were directed to examine first the question of extending protection to the manufacture of steel in India. In order that the Board may proceed with their investigations without undue delay it is important that they should receive as soon as possible from firms or persons interested in the steel industry or the industries dependent on the use of steel full statements of their views.

"2. The primary question to be examined is whether the circumstances of the steel industry are such as to justify protection being extended to it and, if so, what should be the nature and extent of the protection given. But the Board have also to take into account the effect which any measures they recommend may have on industries dependent on the use of steel, and in particular the industries which manufacture wagons, locomotives and other Railway requisites. It will be necessary for the Board to keep this aspect of the case constantly in mind throughout their enquiries, and it will greatly facilitate their work if those interested in the industries referred to will submit statements of their views as soon as possible, and state at the same time whether they desire that a witness or witnesses, should be examined orally in support thereof.

"3. The Board's office will close in Simla on the 8th August and the Board will then proceed to Jamshedpur where the evidence adduced on behalf of the Tata Iron and Steel Company will be taken. On the completion of their work at Jamshedpur the Board will continue their enquiries at Calcutta on a date to be announced subsequently."

3. The evidence of the Tata Iron and Steel Company was taken at Jamshedpur between the 17th and the 27th of August and the

14th and the 21st of December. During both visits the Members of the Board had the advantage of visiting the Company's Works and also those of other firms at Jamshedpur. The rest of the evidence was taken at Calcutta between the 10th September and the 9th November and between the 5th and 10th December 1923; at Bombay between the 16th and the 29th November; and at Delhi between the 22nd and the 28th January 1924. Two short visits were also paid to Asansol, at the beginning of September and the end of October, for the purpose of visiting engineering and other works in the coal fields.

4. A list of the firms who submitted representations asking for the grant of protection to various steel products is given in Statement I (annexed), and also the dates on which they addressed the Board and on which their representatives were examined orally. In practically every case the Board found it necessary to ask for additional information and this was always readily supplied in supplementary written statements.

5. The views of the engineering industry on the question of protection for steel were stated in a written representation from the Indian Engineering Association of which most of the engineering firms are members. Rolled steel being the most important raw material of the engineering industry, the Association was naturally opposed to the imposition of protective duties which would raise its price, and considered that such assistance as might be required should preferably be given in the form of bounties. If, however, protective duties were imposed on rolled steel, then the Association recommended that duties at the same rate should also be imposed on fabricated steel. The views put forward by the Association were in substance (but with variations in detail) the views expressed by the engineering firms who addressed the Board. In order to ascertain as far as possible how the engineering industry was likely to be affected by protection for steel, a questionnaire was drawn up and addressed to a large number of engineering firms and detailed replies were received from several of them. Three firms interested in the manufacture of iron or steel also tendered evidence at the request of the Board. A list of these engineering and other firms is given in Statement II (annexed) together with the dates of the representations, and the dates on which the representatives of some of them were examined orally.

6. In order to ascertain the probable effect of protection for steel on Railway costs, the Board drew up three questionnaires relating to—

- (a) Rolled steel and fabricated steel,
- (b) Steel castings,
- (c) Railway wagons.

These were issued to the principal Railway Companies in India from all of whom replies were received. The Board also received, through the Government of India, a letter addressed by the Indian Railway Companies to the Secretary of State. The Port Trusts

of the principal Indian ports were also addressed by the Board and gave expression to their views in written communications. Mr. Hindley, the Chief Commissioner of Railways, and representatives of four Railway Companies and of the Calcutta Port Commissioners were examined orally (see Statement III).

7. The Board received a number of other representations from commercial bodies, from firms and from private individuals. A list of those which were put forward on behalf of particular industries has been given in Statement IV, and of those which considered the question of protection for steel more generally in Statement V.

8. Two questionnaires were drawn up and addressed to the Provincial Governments. The first of these was directed to ascertaining the probable annual consumption of steel by Provincial Governments, and consequently the additional burden which protection for steel might entail on Provincial finances. The second was concerned with the probable effect of protection for steel on the cultivating classes and the minor industries and handicrafts whose representatives were not likely to approach the Board direct. The Board are greatly indebted to Provincial Governments for the information supplied.

9. In order that they might be better able to appreciate the evidence placed before them, the Board visited a number of Engineering and other works. A list of these is given in Statement VI.

10. In all the Board received 103 written statements from Provincial Governments, Railway Companies and Port Trusts, Chambers of Commerce and other commercial and industrial bodies, commercial and industrial firms, Government officers and private persons. Oral evidence was taken on 55 days during which 41 witnesses, or groups of witnesses, were examined.

STATEMENT I.

List of firms who submitted representations to the Tariff Board asking for protection, in one form or other, for steel products

No.	Product proposed to be protected.	Names of firms applying for protection.	Dates of written representation.	Dates of oral examination.
1	Rolled Steel . . .	The Tata Iron and Steel Company, Limited	27-28th July 1923 . . .	17th, 18th, 20th, 23rd, 24th, 25th, 27th August and 14th, 16th, 17th 1923; 20th, 21st December 1923.
2	Steel castings . . .	The Kirtanand Iron & Steel Works, Ltd. The Hukumchand Electric Steel Works . . .	4th September 1923 . . . 28th August 1923 . . .	19th September 1923. 17th September 1923.
3	Tinplate . . .	The Tinplate Company of India, Ltd. . .	14th August 1923 . . .	28th August and 10th September 1923.
4	Railway wagons . . .	The Indian Standard Wagon Company, Ltd. Burn & Company, Ltd. Jesop and Company, Ltd.	21st August 1923 . . . 11th September 1923 . . . 14th September 1923 . . .	14th and 15th September and 2nd October 1923. 21st September and 2nd October 1923. 26th September and 5th October 1923.
5	Railway Locomotives . . .	The Peninsular Locomotive Company, Ltd.	3rd October 1923 . . .	20th December 1923.
6	Wire and Wire Nails . . .	The Indian Steel Wire Products, Ltd. . .	30th August 1923 . . .	27th September 1923.
7	Agricultural Implements . . .	The Agricultural Implements Company, Ltd. Kirkoskar Brothers Ltd.	27th September 1923 . . . 18th November 1923 . . .	23rd November 1923. 26th November 1923.
8	Enamelled Ware . . .	The Bengal Enamel Works Ltd. The Bengal Enamel and Stamping Works. The Pioneer Enamel and Iron Works Ltd. Enamelled Ironware Ltd.	21st September 1923 . . . 12th October 1923 . . . 15th October 1923 . . . 28th August 1923 . . .	4th October 1923. 29th October 1923. 28th October 1923.

STATEMENT II.

List of Engineering Associations and firms and of firms interested in the manufacture of iron and steel who submitted representations to the Tariff Board or replies to the Board's questionnaire.

No.	Name of Association or firm.	Date of representation.	Date on which representative was examined orally.
1	Indian Engineering Association .	13th September 1923	24th September 1923.
2	Bombay Engineering Employers' Federation.	17th September 1923.	.....
3	Burn and Company, Limited .	11th September 1923	21st September and 2nd October 1923.
4	Jessop and Company, Limited .	14th September 1923	26th September and 5th October 1923.
5	The Vulcan Iron Works, Limited .	15th September 1923	28th September 1923.
6	The Indian Iron and Steel Company, Limited.	4th October 1923	30th October 1923.
7	The United Steel Corporation of Asia Limited.	3rd November 1923	5th November 1923.
8	The Bengal Iron Company, Limited.	3rd October 1923	8th November 1923
9	Richardson and Cruddas . .	9th August 1923 .	21st November 1923.
10	The Kumardhubi Engineering Works, Limited.	2nd November 1923.	5th December 1923.
11	Fairbairn, Lawson, Combe and Barbour (India), Limited.	10th November 1923	5th December 1923.
12	Paffy's Engineering Limited .	14th August 1923	.....
13	The Angus Company, Limited	4th September 1923	.....
14	The Shalimar Works, Limited	11th September 1923	.....
15	MacKintosh Burn Limited .	12th September 1923	.....
16	Heatly and Grésham, Limited .	24th September 1923	.....
17	Jag, Alexander and Company, Limited.	9th October 1923	.....
18	J. C. Gammon (Bombay) Limited	29th November 1923	.....

STATEMENT III.

List of Railway Companies and Port Trusts who sent replies to the questionnaires issued by the Board.

No.	Name of Railway Company or Port Trust.	Date or dates of replies.	Date on which a representative was examined orally.
1	Bengal Nagpur Railway Company	15th November and 11th and 22nd December 1923.	7th November 1923.
2	Great Indian Peninsula Railway Company.	2nd November, 15th and 22nd December 1923.	28th November 1923.
3	Bombay, Baroda and Central India Railway Company.	13th and 28th November 1923.	29th November 1923.
4	East Indian Railway Company .	2nd January 1924 .	7th December 1923.
5	Madras & Southern Mahratta Railway Company.	29th and 30th October and 2nd November 1923.	..
6	South Indian Railway Company .	16th, 20th and 23rd November 1923.	..
7	Burma Railway Company .	23rd November 1923	..
8	Bengal and North Western Railway Company.	16th and 27th October and 15th November 1923.	..
9	Assam Bengal Railway Company	2nd and 5th November 1923.	..
10	Port Commissioners of Calcutta .	13th November 1923	6th December 1923.
11	Port Commissioners of Rangoon .	19th October 1923 .	..
12	Madras Port Trust . . .	30th October 1923 .	..
13	Karachi Port Trust . . .	16th November 1923	..
14	Bombay Port Trust . . .	20th November 1923	..
15	The Railway Board . . .	..	26th and 28th January 1924.

STATEMENT IV.

List of Associations and firms representing industries likely to be affected by protection for steel who submitted representations to the Tariff Board.

No.	Name of Association or firm.	Date of representation.	Date on which a representative was examined orally.
1	Indian Mining Federation . .	28th September 1923.	
2	Indian Jute Mills Association .	1st December 1923.	
3	Indian Mining Association . .	11th January 1924.	
4	Turner, Morrison and Company, Limited.	30th October 1923 .	3rd November 1923.
5	Standard Oil Company of New York	29th October 1923	3rd November 1923.
6	Burma Electric Tramways and Lighting Company, Limited.	26th November 1923	
7	Madras Electric Tramways (1904) Limited.	27th November 1923	
8	Calcutta Tramways Company, Limited.	12th December 1923.	
9	East Bengal River Steam Service Limited.	6th October 1923.	
10	The British Burma Petroleum Company, Limited.	24th October 1923.	
11	Messrs. John Taylor & Sons' Committee.	25th October 1923.	
12	British Indian Electric Committee, London.	29th November 1923.	
13	The Indian Galvanising Company Limited.	28th January 1924.	

STATEMENT V.

List of Chambers of Commerce and other Commercial bodies, importing firms and private individuals from whom representations were received on the general question of protection for steel.

No.	Name of Chamber of Association.	Date of representation.	Date on which representative was examined orally.
1	Bombay Chamber of Commerce .	30th October 1923 .	26th November 1923.
2	Bengal Chamber of Commerce .	24th November 1923	10th December 1923.
3	Burma Chamber of Commerce .	1st September 1923.	
4	Madras Chamber of Commerce .	8th September 1923.	
5	Karachi Chamber of Commerce .	22nd November 1923.	
6	Upper India Chamber of Commerce.	25th January 1924.	
7	Indian Merchants' Chamber .	11th August 1923 .	27th November 1923.
8	The Punjab Trades Association .	27th July 1923.	
9	Marwari Association, Calcutta .	20th November 1923.	
10	The Native Share and Stock Brokers' Association, Bombay.	29th November 1923.	
11	Calcutta Trades Association .	28th December 1923.	
12	Calcutta Import Trade Association.	11th September 1923	1st October 1923.
13	Anandji Haridas and Company .	6th October 1923 .	8th October 1923.
14	Bombay Iron Merchants Association.	30th July 1923 .	19th November 1923.
15	Some Iron Merchants of Calcutta.	2nd October 1923 .	
16	George Service and Company .	20th November 1923	22nd November 1923.
17	Mr. George Pilcher, Calcutta .	2nd November 1923	9th November 1923.
18	Mr. M. Homi, Bombay . .	15th October 1923 .	16th, 17th, 19th and 20th November 1923.
19	Mr. A. Ramaiya, Madura . .	8th October 1923.	
20	Mr. M. S. M. Sharma, Bombay .	23rd November 1923.	
21	The Fiscal Reform League, India	15th January 1924.	
22	National Federation of Iron and Steel Manufacturers of Great Britain.	26th October 1923.	
23	Sheffield Chamber of Commerce .	1st October 1923.	
24	London Chamber of Commerce .	6th December 1923.	

STATEMENT VI.

List of the engineering and other firms whose works were visited by the Board.

No.	Name of firm.	Works visited.	Date of visit.
1	The Tata Iron and Steel Company	Works at Jamshedpur.	On several dates in August and December 1923.
2	Ditto	Gurumahisini Iron ore mine.	30th August 1923.
3	Indian Steel Wire Products Limited.	Works at Jamshedpur.	August 1923.
4	Indian Agricultural Implements, Limited.	Ditto .	Ditto.
5	The Tinplate Company of India (Limited).	Ditto .	Ditto.
6	Calmoni Engineering Works, Limited.	Ditto .	Ditto.
	Peninsular Locomotive Company, Limited.	Ditto .	18th December 1923.
	Indian Iron and Steel Company, Limited.	Works at Burnpur, near Asansol.	4th September 1923.
9	Indian Standard Wagon Company, Limited.	Ditto .	4th September 1923.
10	Bengal Coal Company . . .	Coal Mine at Sodepore.	5th September 1923.
11	Kirtyanand Iron and Steel Works, Limited.	Works at Alladih near Rupnarainpur.	Ditto.
12	Bengal Iron Company . . .	Works at Kulti .	6th September 1923.
13	Eastern Light Castings, Limited .	Ditto .	Ditto.
14	Angus Company, Limited . . .	Works at Bhadreswar.	8th September 1923.
15	Burn and Company, Limited .	Engineering Works at Howrah.	13th September 1923.
16	Jessop and Company, Limited .	Engineering Works at Howrah.	29th September 1923.
17	Ditto .	Wagon Building Works at Garden Reach, Calcutta.	Ditto.
18	Marshall Sons and Company (India), Limited.	Works at Agarpara near Calcutta.	September 1923.
19	Hukumchand Electric Steel Works	Works at Ballygunge.	Ditto.
20	Kumardhubi Engineering Works, Limited.	Works at Kumardhubi.	27th October 1923.
21	Kumardhubi Fire Clay and Silica Works, Limited.	Ditto .	Ditto.
22	Fairbairn, Lawson, Combe and Barbour (India) Limited.	Works at Sarsatala near Jamgaon.	28th October 1923.

ANNEXURE B.

Memorandum on the manufacture of Wire and Wire Nails.

1. In response to the Board's invitation calling upon all industries interested in, or likely to be affected by, the protection of rolled steel, the Indian Steel Wire Products, Limited, was the only Company which applied for the protection of the manufacture of wire and nails. It also gave oral evidence through one of its Directors, Mr. Walchand Hirachand. It has since come to the notice of the Board that there is another Company, called the Pioneer Nail Company of Calcutta, which manufactures wire nails. As it has not appeared before the Board, and as the Board have at their disposal no means of ascertaining its financial position or its manufacturing activities, the Board must proceed all along on the assumption that, at present, the only Company which is seriously interested in the manufacture of wire and its products is the Indian Steel Wire Products, Limited.

The Company has its works at Jamshedpur in fair proximity to the Tata Iron and Steel Company's Works. It has an authorised capital of Rs. 50 lakhs, of which about half has been issued and called up, though the amount actually paid up on the issue is about Rs. 21.6 lakhs. It has entered into various contracts with the Tata Iron and Steel Company for the supply of wire rods which is the principal raw material for its manufactures, as also for the supply of water and electricity at rates which appear to be fair and reasonable and not above the rates at which both can be had in other industrial parts of India. It has got a plant which the Board inspected at work which is said to have a capacity of manufacturing about 12,000 tons of all kinds of wire products when it is fully in operation. Though this is said to be the full capacity of the plant, in the course of the Board's investigation the Company has not presented them an estimate which fully covers that amount. The highest estimate placed before them is for a total output of 9,000 tons a year, working three shifts a day. In any event, whether the full capacity is assumed to be the one or the other, it is capable, as will be presently pointed out, of producing wire and wire products in quantities which will be equivalent to a substantial and the bigger portion of the demand of the country, as far as it can be ascertained. Though the Company was registered as far back as 1919, it did not commence operation until the beginning of 1923. It only reached the production of 120 tons in August 1923 and the manufacture was confined to the drawing of wire and the making of wire nails. The Company is equipped for the manufacture of galvanised wire but has not yet installed any machinery for the production of barbed and stranded wire. Under these circumstances, this enquiry must necessarily be confined to the conditions under which wire, plain or galvanised, and wire nails are manufactured.

2. The following figures are extracted from an advance copy of the Annual Statement of the Seaborne Trade of British India with the British Empire and foreign countries for the year ending 31st March 1923:—

Summary for 1922-23.

	Tons.	Tons.
<i>Fencing Wire—</i>		
United Kingdom	561	
Total British Empire		565
Germany	622	
Belgium	338	
U. S. A.	340	
Foreign total		1,330
TOTAL		<u>1,895</u>

Wire, other than fencing wire—

United Kingdom	1,135	
Total British Empire		1,177
Germany	1,447	
Belgium	659	
U. S. A.	257	
Total foreign		2,616
TOTAL		<u>3,793</u>

Wire Nails—

United Kingdom	629	
Total British Empire		664
Germany	6,650	
Belgium	3,912	
U. S. A.	1,378	
Total foreign		12,146
TOTAL		<u>12,810</u>

Government Imports.

Wire—

United Kingdom		731
Germany	360	
Belgium	25	385
TOTAL		<u>1,116</u>

Total: All kinds: Wire and Wire Nails.

	British Empire.	Foreign.
	Tons.	Tons.
Fencing wire	565	1,330
Other wire	1,177	2,616
Government wire	731	385
Wire nails	664	12,146
TOTAL	3,137	16,477
GRAND TOTAL		20,614

3. From the above figures it is clear that in the two kinds of manufacture in which the Company is at present engaged, the competition is mainly from Germany and Belgium and that the imports from the United Kingdom are relatively small, and judging by the average prices, they appear to be catering for the finer classes of wire and wire products which are not being manufactured in India. When in a later paragraph the prices of the British article are compared with those of the Continental and the Indian articles, this position will appear in a clearer light. On these figures and on Mr. Walchand's direct statement, the Indian manufacturer is at present not interested in the kind of articles which are imported from Great Britain, but it is clear that even eliminating this the Indian manufacturer has still left him a market of fairly big dimensions which he can capture. This market may at present be described as being in the neighbourhood of 16,000 tons per year on the figures of 1922-23.

The Company's plant which the Board inspected in August is equipped on a scale reasonably calculated to produce wire and wire products economically and on a commercial basis. The machinery is up-to-date and can be manipulated without much difficulty by the kind of intelligent Indian labour which is normally available in the country, under proper expert supervision during the initial stages. The quality of the wire produced appeared to bear a favourable comparison with the imported wire. In the matter of nails, however, there was room for more attention and care in the manipulation of the machinery which, though simple, requires careful adjustment in order to ensure the evenness of quality. In order to show how favourably this particular industry is situated with reference to Indian conditions, perhaps a short description of the process of manufacture and of the raw materials used may not be out of place.

4. Where the industry has been established on an organised and extensive scale, it happens, not infrequently, that the manufacture of wire is carried on in conjunction with the rolling of wire rods which, in their turn, are rolled from

Connection of wire drawing with the steel industry.

billets as part of the process of manufacturing steel. In this sense, wire drawing may be described as a continuation of the processes relating to the manufacture of the cruder forms of steel. In many industrial organisations, however, the processes have, as in the case of the Indian Steel Wire Products, Limited, been separated, that is to say, ready-made wire rod of suitable size is purchased and subjected to further processes for the purpose of drawing it into wire and manufacturing from it other products. Wire so drawn may be used plain, or coated with zinc or other metal. Plain or galvanised wire, again, may be converted into ropes, barbed wire, woven wire-fencing, nails and various kinds of products.

5. Wire rods are the principal raw materials of these manufactures. As indicated elsewhere they are at present imported. Their manufacture forms part of the programme of the Greater Extensions of the Tata Iron and Steel Company. Though open hearth basic steel is not suitable for the manufacture of the finer and more expensive varieties of wire and wire products, it is quite suitable for the manufacture of all kinds of ordinary wire and wire products which represent the bulk of the Indian demand.

Wire rods come to the wire mill usually in coils. Their diameter varies, but ordinarily it is less than a quarter of an inch. Previous to the drawing process they have to be cleaned, usually by immersion in a hot solution of sulphuric acid—a process which adds considerably to the cost of production—in order to remove the scale left on them by the rolling process. They are then washed and put into a lime bath. This removes the last traces of the sulphuric acid, and helps the lubrication they have to receive subsequently in the drawing process. They are next heated in a baking oven to ensure the complete removal of the bad effects of the sulphuric acid. They are thereafter drawn through a succession of hard steel dies in which are holes. By passing through holes which are successively smaller and smaller the wire attains the requisite diameter. In order to prevent the wire from becoming too hard it may be necessary to heat it in an annealing furnace and to subject it more or less to the same cleaning processes as the wire rods before it is ready for use.

When the wire has reached this condition, if it is to be used for making wire nails, it is taken to the nail machine. It is an automatic machine which performs all the processes in rapid succession which are necessary to the production of the finished nail. As the wire is fed into the machine it is “seized by gripping dies, and the head formed on the end by the blow of a heading tool. As the header withdraws, the wire is pushed forward the length of the nail, and the cutting dies advance from the sides and clip off the nail, forming its point. The ejector disposes of this nail just as the wire behind is advanced to be headed. The nails are cleaned of the lubricant and oil of the drawing process and of the ‘whiskers’ which may be left at the point of the nail by the pointing machine

by being shaken up with saw dust in tumbling barrels. Special finishes may be given to nails to meet special needs."

6. There are two principal objects in view in describing these processes in somewhat greater detail than was necessary on their own merits. First of all A simple industry. to make it clear that the mechanical equipment of the industry is if moderately expensive, mainly automatic in operation, mastery over which can fairly easily and without unduly prolonged training be acquired by intelligent Indian labour. Though the wisdom of the course adopted by the Indian Steel Wire Products, Limited so early in their career of reducing their expert European supervision to a single foreman is not clear, it is some proof of the statement that the industry is one in which the problem of training Indian labour enters less largely than in most other industries which have come under the Board's review. Its principal raw material, moreover, is, or will be very soon, on the spot. The power required by it is relatively small, and is obtained cheaply and in sufficient quantity. As has been already stated, its home market is considerable and within its reach. Under these circumstances, this industry is suited to the industrial conditions of India, and the chances of its success are considerable.

Secondly, to emphasize the fact that the manufacture of nail is separated from that of drawing wire by the intervention mainly of automatic machines, several of which can be looked after by a single workman properly trained for the purpose. The Indian Steel Wire Products Company employ at present one attendant per one machine and a foreman to about every dozen men. Owing to the simplicity of the machinery, the expenditure of direct labour on the production of nails is likely to be so small that it is unnecessary to examine the cost of their production separately from that of the manufacture of wire. Even if it were necessary, it is not possible to do so because the Company themselves do not maintain their costs separately and therefore there are no materials before us on which they can be investigated. Mr. Walchand, one of the Directors of the Company, who gave evidence, complained that the German manufacturer sold his nails cheaper than his wire because what he spent on the slight labour and overhead on machinery, he more than recovered by using up the short lengths and 'waster' coils of wire in making the nails. The principle can be applied to Indian conditions only with a good deal of caution and not a little modification, but it may be taken as an indication of the low cost of the nail making operation and as a sufficient additional reason for not separately examining the costs of production of the two articles. The cost of production of one ton of finished plain wire may now be discussed.

7. This expression has several different meanings, and it may perhaps be as well to indicate in what sense it is used throughout this memorandum. It includes (a) all costs incurred by the manufacturer at the works and

briefly called the works costs and (b) all overhead charges, which must be added to (a), to arrive at a figure at which he can sell the article without any profit or any loss.

(a) The works costs may be sub-divided as follows:—

(1) Metal cost.

(2) Cost above metal, including—

(i) consumable stores, *e.g.*, sulphuric acid, lubricants, etc.;

(ii) coal and coke;

(iii) water and electricity;

(iv) wages of labour and supervision.

(b) The overhead charges may be sub-divided as follows:—

(i) Depreciation.

(ii) Interest on working capital.

(iii) Head office charges.

(iv) Miscellaneous direct and indirect charges.

8. In dealing with either aspect of the cost of production, there are several difficulties which, it must now be obvious, are not peculiar to this industry only. Firstly, the industry is represented, so far as there is any evidence, by one manufacturer, the Indian Steel Wire Products, Limited. The result is that the Board are not in a position to compare their cost with that of any other competing manufacturer in this country; nor are they in a position to make a comparison with recent foreign costs. Secondly, at the time the Board examined the representative of the Company (27th of September 1923) the Company could place before them only four months' experience of manufacture, and the works costs available are therefore limited to that short period. Thirdly, for the same reason, the industry has not reached that stage of productivity which contributes to a reasonable reduction of the works cost, or of the overhead charges per ton of production. Working three shifts a day, the plant is capable of producing 750 tons per month or about 9,000 tons per annum of finished wire. With one shift per day fully employed it is thus possible for it to produce 250 tons per month or 3,000 tons per annum. Even this has not been achieved, for the production did not exceed 87 tons in May, 84 tons in June, 111 tons in July, and 120 tons in August 1923. The consequences of such a state of affairs are not difficult to understand. As will be presently shown even by the moderate increase in production from 87 tons in May to 120 tons in August, the works cost above nett metal dropped from about Rs. 82-13-0 to Rs. 76-4-0 per ton, a difference of Rs. 6-9-0 per ton. According to the figures supplied by the Company the works costs, when the production rises to 750 tons per month, are expected to drop to about Rs. 65-8-0, a further difference of Rs. 10-12-0 per ton, or a difference of Rs. 17-3-0, equivalent to about 20 per cent. compared with the

works costs in May 1923. According to the revised figures arrived at in paragraph 11, a still further drop of Rs. 7-2-0 per ton may be expected, thus raising the total difference since May 1923 to Rs. 24-5 per ton, equivalent to about 30 per cent. The difference between the overhead charges spread over 87 tons and 750 tons per month will appear enormous.

9. In the light of the above facts, any enquiry into the cost of production will be fruitless unless it is conducted with reference to an actual or assumed production which represents a reasonable quantity per annum. The actual or the assumed quantity must be large enough to produce at least a minimum quantity of economic results. In the case of this industry the actual production is too small, and any results based upon it must be forthwith dismissed as extravagant for the reasons already given. The only alternative is to assume a quantity of annual production which, in all the circumstances of the case, appears on the whole to be reasonable. The full output of 750 tons a month cannot be worked up to within at least 3 or 4 years. It will, therefore, be out of the question to work out the cost of production on that output at the present moment. Nor, on the other hand, can the output of 120 tons per month which was attained in August 1923, be accepted as reasonable in the case of an industry seeking national assistance. There is no reason why, since that date, and if the proposals here put forward are given effect to, the production should not reach the full output at least of a single shift, that is to say, 250 tons a month or 3,000 tons a year. The wire industry is, in all countries where it has been successful, one of large plants and therefore of large production. The plant itself is large enough, and it can, and ought to, produce at least a third of its possible output at the end of its first year of working, and within three or four years attain to its fullest output. The Board must, therefore, conduct their enquiries into the cost of production and make their recommendations on the basis that the annual production is at least 3,000 tons.

10. The first item in the works cost is the nett metal cost. At present the wire rods which form the principal raw material are imported. They are of continental origin, and cost, landed at the works, Rs. 8-8-0 per cwt. or Rs. 170 per ton. For the reasons given in paragraph 25 in dealing with the question of compensatory protection, it may be assumed that, even when the Company have to buy locally manufactured wire rods, their cost per ton will remain, unless there is some further drop in British and American prices, in the neighbourhood of this figure. One ton of finished wire, however, requires, owing to wastage in the process of manufacture, an additional quantity which will fairly be represented by an extra 10 per cent. Taking the price of wire rod at Rs. 170 per ton, the nett metal cost with the additional 10 per cent. amounts to Rs. 187 per ton of finished wire.

(a) Works cost.

(1) Metal cost.

11. *Cost above metal.*—The following figures were, under this heading, given by the Company for the four months from May to August 1923, and on the assumption that the full output of 750 tons per month was attained (*vide* Appendix E and Appendix G to Statement III):—

—	May.			June.			July.			August.			Full output.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1. Stores, etc. . .	42	8	0	45	8	0	38	9	6	35	0	0	38	8	0
2. Coal and coke . .	5	0	0	5	0	0	5	13	0	4	8	0	5	10	0
3. Electric and water supply.	9	0	0	9	0	0	13	5	0	12	12	0	6	12	0
4. Wages . . .	27	5	0	24	13	6	29	0	0	24	0	0	14	10	0
TOTAL . . .	83	13	0	84	8	6	82	11	6	76	4	0	65	8	0
Production . . .	87			84			111			120			750		
	tons.			tons.			tons.			tons.			tons.		

It will be seen that of the four months, the figures for August are the lowest in each item except that the charge for electric and water supply has risen from Rs. 9-0-0 in May to Rs. 12-12-0 in August, though the production in the latter month was higher than in the former. Mr. Walchand explains this difference by stating that the price they pay to the Tata Iron and Steel Company is regulated by the price of coal and that there has been a rise in its price. He also thinks that the figures cannot be taken as absolutely correct, as the system of keeping the costing account had not been worked long enough. When the output increases there should naturally be a reduction in this charge, and it would not be unfair if, at any rate, this item was reduced from Rs. 12-12-0 to Rs. 9-0-0, the figure for May and June. This reduces the total for August from Rs. 76-4-0 to Rs. 72-8-0.

The biggest item in the cost above metal is the one for stores, etc. A detailed list of charges under this head is given in Appendix K to Statment III, dated the 18th October 1923. The amount is reduced from Rs. 42-8-0 in May to Rs. 35-0-0 in August. Sulphuric acid accounts for more than Rs. 14 in the list. If the output increases from 120 tons in August to the assumed output of 250 tons per month, there is room for further reduction, and if the proposals which are under consideration for the removal of the duty on sulphur are accepted, there is a certainty of reduction in the cost of sulphuric acid. There are, therefore, reasonable grounds for the reduction of this item from Rs. 35 to Rs. 32-8-0. For the same reasons the figure of Rs. 38-8-0 should be reduced when the

full output is attained, to Rs. 32-8-0. The reason why this figure, when the output is much higher than in August, should be higher than that for August is not apparent.

The next big item is under labour. This has been reduced from Rs. 27-5-0 in May to Rs. 24-0-0 in August. When the output as compared with August is more than doubled, the charge under this head must go down. A reduction therefore of 25 per cent. under that head does not appear to be unreasonable, and accordingly, it may be reduced to Rs. 18 from Rs. 24. In the absence of any definite evidence to the contrary, the Company's figure of Rs. 14-10-0 for the final future output under this heading may be accepted.

There is a slight increase under the head coal and coke in the future figures, as compared with August, which has not been explained, and for which there is no justification on the evidence.

The revised figures, therefore, are as follows:—

	Output 250 tons per month.			Output 750 tons per month.		
	Rs.	A.	P.	Rs.	A.	P.
1. Stores, etc.	32	8	0	32	8	0
2. Coke and coal	4	8	0	4	8	0
3. Electric and water supply	9	0	0	6	12	0
4. Wages	18	0	0	14	10	0
TOTAL	65	0	0	58	6	0

The figure of Rs. 65 bears, on the smaller output, a fair comparison with Rs. 58-6-0 on the bigger output, and it may accordingly be allowed as being reasonable under all the circumstances taken together.

12. The total works costs are per ton:—

Total works costs.

	Rs.
Nett metal	187
Above metal	65
TOTAL	252

13. Overhead charges on one ton of wire:—

(b) OVERHEAD CHARGES.

(i) Depreciation.

(i) Depreciation.—The Company was asked to work out the total depreciation on plant and machinery and on build-

ings. Depreciation on plant and machinery at $7\frac{1}{2}$ per cent. and on buildings at $2\frac{1}{2}$ per cent. is reasonable. The Company gave the following figure for depreciation per month; (*vide* Appendix F to Statement III, dated 18th October 1923).

	Rs.
Depreciation on plant and machinery at 10 per cent.	4,820
On Buildings at $2\frac{1}{2}$ per cent.	809
	<hr/>
TOTAL	5,629
	<hr/>

If the depreciation on machinery is reduced from 10 to $7\frac{1}{2}$ per cent., the figures for the two are per month:—

	Rs.
Plant and Machinery	3,615
Buildings	809
	<hr/>
TOTAL	4,424
	<hr/>

14. The Company claim interest at 9 per cent. on a working capital of Rs. 4 lakhs. The amount of capital may be accepted as reasonable. But the claim for interest should be reduced from 9 to $7\frac{1}{2}$ per cent., which is reasonable. On this basis, the interest on working capital per month is Rs. 2,500.

15: The Company claim under this head Rs. 3,000 per month. It is not proved that the maintenance of such a costly head office in Bombay, and so far from the works, is conducive either to efficiency or economy. The industrial conditions of the country, however, are such that most industries are managed on behalf of companies by Managing Agents whose headquarters are, ordinarily, at one or other of the bigger commercial centres. The principal reason assigned for this is that the finances of almost every industrial company are dependent largely upon the credit, influence and business reputation of the Managing Agents. So long as these industrial conditions remain the same, this system has to be tolerated as a necessary evil, and on that ground mainly it is not easy to propose any other course than the acceptance of the figure claimed.

16. These are intended to cover insurance, postage, labour, welfare and other charges. On the average of four months from May to August, a sum of Rs. 1,000 per month is adequate.

The figures for overhead charges per month may now be summarised as follows:—

	Rs.
(i) Depreciation	4,424
(ii) Interest on working capital	2,500
(iii) Head Office	3,000
(iv) Miscellaneous	1,000
	<hr/>
TOTAL	10,924
	<hr/>

On the assumed production of 250 tons per month the overhead charges per ton come to about Rs. 44.

17. The total cost of production per ton thus comes to—

Total cost of production.

	Rs.
Total works costs (<i>vide</i> paragraph 12)	252
Overhead charges	44
	<hr/>
TOTAL	296
	<hr/>

18. It must now be determined how much per ton should be added to the figure of Rs. 296, to enable the industry to earn a reasonable profit on its investment. Profit on investment. In the case of the smaller industries, of which the wire industry may be regarded as one, a return of 10 per cent. is reasonable, and any figure below that will fail to attract Indian capital.

The total called up capital of the Company is just under 25 lakhs. The paid up amount, however, is about 21.6 lakhs, according to their last balance sheet. The capital, therefore, which is entitled at present to earn may be taken as 21.6 lakhs. Excluding the value of stores this amount approximately represents the total block value of the Company's property according to the last balance sheet. A return of 10 per cent. on this amount means 2.16 lakhs per annum.

The question that now arises is: over what production is this amount to be spread? If it is to be earned on a production of 3,000 tons per annum or 250 tons per month, it works out at Rs. 72 per ton. This would involve too heavy a burden upon the country, and it would be regarded as commercially unsound to load a quarter or a third of the possible production with the whole of the profits of such possible production. No industry can, within such a short period of production as one year after the commencement of business, expect a return on the whole of its invested capital. The case against such a claim by an industry

asking for national assistance is even stronger. They should therefore be allowed on each ton of actual production a profit per ton calculated on the full capacity of the plant. The capacity of the plant has been assumed to be 9,000 tons per annum. The total profit on that output is 2.16 lakhs or Rs. 24 per ton. This rate of profit on 3,000 tons per annum produces a total of Rs. 72,000 per annum.

19. The price that the industry ought to get per ton is therefore Rs. 320 per ton as under:—

The price at which wire can be sold at a profit.

	Rs.
Total cost of production	296
Profit	24
TOTAL	320

20. The price at which imported wire enters and is sold in India should next be determined. According to C.i.f. landed price of Mr. Walchand, common wire which comes from foreign wire, chiefly from the Continent is sold in India, after having paid duty at 10 per cent. *ad valorem*, at Rs. 15 per cwt. —or Rs. 300 per ton. The tariff valuation of one ton of wire nails, which for practical purposes may be assumed to be the valuation for wire, is Rs. 280. Deducting from Rs. 300 the duty of Rs. 28 per ton but not the trade charges, commission, etc., the nett price is Rs. 272 per ton. A further deduction on account of these charges, say at the rate of 5 per cent., gives the c.i.f. landed price of approximately Rs. 260 per ton.

The question now is: can this safely be taken as the price at which, without duty, imported wire enters this country? The figure given by Mr. Walchand, though low, is borne out by the quotations in the Calcutta Prices Current, a weekly publication issued by the Bengal Chamber of Commerce. The Tariff Valuation of Rs. 280 per ton is in substantial agreement with Mr. Walchand's figure after deduction of duty.

According to figures received from the Chief Controller, Indian Stores Department, the f.o.b. prices of wire nails imported from the United Kingdom were as follows:—

Date.		Rs. &
30th November 1923	2" . . .	15 15
16th November 1923	2½" . . .	14 7
30th November 1923	3" . . .	14 4

These f.o.b. prices work out on an average at Rs. 15 per cwt. or Rs. 300 per ton.

Another Rs. 25 added will give the approximate c.i.f. landed price of Rs. 325 per ton. These prices are higher than Continental

prices. No one need be surprised at the difference, for it has been found in connection with the kind of Continental rolled steel which competes against Indian rolled steel, in bars, for instance, that there is a difference of about £2 per ton between Continental and British prices in favour of the former.

21. Upon the figures obtained in paragraphs 19 and 20, the Amount of protection which the industry ought to receive, and which ought to be recommended, is Rs. 60 per ton. This is the difference between the price at which wire can be manufactured and sold at a reasonable price in India, and the price at which the foreign wire can be sold, if no duty had to be paid upon it. The recommendation should apply equally to wire specified in paragraph 22 and all wire nails.

22. In connection with the duty on wire it is important to decide the form which the duty should take and the classes of wire to which it should apply. At present the duty is on a uniform basis of 10 per cent. *ad valorem* on all kinds of wire. But the Company is not equipped to make barbed wire or stranded fencing wire, and nothing should be added to the burden on these. They are not specially expensive forms of wire, and since a specific duty of Rs. 60 per ton would be equivalent to much more than the present duty, barbed wire and stranded fencing wire should continue to pay 10 per cent. *ad valorem*. The remaining kinds of wire which are imported fall into two main groups—(a) single strand plain or galvanised wire made of ordinary soft steel for telegraphs, baling, light fences and a large number of miscellaneous purposes; and (b) special wire either made of soft steel drawn to extremely fine wire or made of harder steels and hardened and tempered or “patented” for springs, umbrella fittings and purposes where special strength or properties are required. The Company are equipped to make the kinds of wire falling into group (a), and it is to these that protection should be given by the application of a specific duty of Rs. 60 per ton. The Company are not in a position to make the wires in group (b) and have stated that they do not wish protective duties to be applied to them. These wires have a much higher value per ton than the others. The values vary considerably, but much the greater proportion of these wires coming into India would fall within the limits of Rs. 500 to Rs. 800 per ton c.i.f. If these were subject to duty on a different basis from the common wires, the Customs authorities would be involved in many difficulties in satisfactorily identifying them for appraisal. These wires, therefore, also should bear a specific duty of Rs. 60 per ton. This would be equivalent to an *ad valorem*, duty varying between about 12 and 7 per cent. It is not very likely that this would add appreciably to the burden of any user, and the probable slight fall in revenue on account of these kinds of wire would be more than offset by the increased simplicity of administration by the Customs, and would be trifling in comparison with the extra revenue produced by the

duties on the common wire, which preponderate enormously in weight.

If at any time circumstances should necessitate the imposition of an additional duty on common wire, the inclusion of these other wires in the same item in the Tariff Schedule might have to be considered.

23. If the proposals above made are accepted, the burden upon the consumer will rise from about Rs. 28 to Rs. 60 per ton or from 10 to 22 per cent. *ad valorem*. According to the figures given in an earlier paragraph, the total imports of all kinds of wire and wire rope per year amount to about 20,000 tons; therefore, even if all kinds of wire wire are hit by these proposals, the total additional burden at Rs. 32 per ton would not exceed Rs. 64 lakhs. This does not, however, represent the extra revenue which the Government may expect to get. If the estimate of 3,000 tons per annum is realised, the net increase cannot exceed about Rs. 5 lakhs, and as the domestic output increases this amount must in proportion diminish.

The total burden will not be excessive. The incidence of the increased burden will be diffused, perhaps, over a larger number of consumers than most other steel products. Moreover, the actual protection that the industry gets is not so high as the figures suggest. Out of the duty of Rs. 60 per ton, at least Rs. 20 may be regarded as compensatory protection even on the present rate of duty on steel, for which the tariff, and not the industry, can be held accountable. The cost of metal has been taken as Rs. 187 per ton. This includes a duty on wire rod at 10 per cent. *ad valorem*, or a duty of about Rs. 17 per ton. In addition, the consumable stores, the value of which has been taken as Rs. 32-8-0 per ton, take away in duty about another Rs. 3 per ton. India cannot have it both ways. She cannot expect to have her manufactured products cheaply as well as derive a revenue from the taxation of their principal raw materials, whether for revenue or protective purposes, or partly for one and partly for the other, as, indeed, is the case in this particular instance. In this respect, so far as competition from the free trading United Kingdom is concerned, India must accept the position of remaining at a disadvantage in common with other protectionist countries, whilst Indian consumers may derive some little consolation from the fact that part of their sacrifice reverts in the end to the State in the shape of additional Customs revenues.

The remaining Rs. 40 per ton, which represents protection in itself to the industry, needs some explanation. The figures given in paragraph 20 suggest a difference between the British and Continental prices of about £4 per ton in this class of manufacture. The Customs figures also tend to prove that the imports from the United Kingdom as compared with those from the Continent are relatively small. One of the legitimate inferences that can be drawn from these facts is that in the inferior forms, at any

rate, of this class of manufacture the Continental countries are able even to undersell the United Kingdom in India. Such being the relative position of the United Kingdom, it would be strange if better results were possible in India, especially during the initial stages of any industry.

The necessity for recommending as high a protection as Rs. 40 per ton arises mainly from the circumstance that the actual production is so small compared to the possible output. In proportion as the production increases, the works cost and, to a far greater extent, the overhead charges will steadily come down, and when the full output is reached, there will be little or no need for protection, unless in the meanwhile conditions which cannot at present be foreseen arise. In order to make the meaning clearer, reference may be made to the figures in paragraphs 11 and 17, where, on a production of 3,000 tons per annum, the cost above metal has been taken as Rs. 65 per ton, and the overhead charges at Rs. 44 per ton, respectively. The figure for the former, when the output reaches 750 tons per month or 9,000 tons per year, is Rs. 58-6, a difference of Rs. 6-10 per ton. If the overhead charges are likewise spread over this amount, they will come down, in proportion, from Rs. 44 to about Rs. 15 per ton, a difference of about Rs. 29 per ton. When the full output is reached, the protective duty of Rs. 40 per ton can be reduced by the total of these figures, that is to say, by Rs. 35-10. The industry may thus be expected to stand on its own legs, apart from compensatory protection.

24. The Company in its final proposals (*vide* Appendix F to Statement III, dated the 18th October 1923) suggested a duty of Rs. 5 per cwt. in addition to the present *ad valorem* duty of 10 per cent., or, in other words, a duty amounting to Rs. 128 per ton as against the present duty of Rs. 28 per ton. No case has been made out for the acceptance of a proposal so extravagant. There were no figures available on which it could be substantiated. It may be admitted that the figures arrived at above are approximate and therefore imperfect; but, on the whole, they should be far nearer the mark than the figures the Board were asked to accept. It is true that they have been only allowed a proportionate profit on the production. Any industry which is able to make any profit at all during the first two or three years of its existence should consider itself fortunate. In any case, if it is a hardship, it must be accepted as one inseparable from the lot of an infant industry. By improved expert supervision the Company can easily increase its output and so increase its profit. Every additional ton produced means a reduction in the cost above metal and, as has been indicated in paragraph 23, a substantial reduction in the overhead charges. If to this is added the possibility, by paying greater attention to the quality of the nails manufactured, of commanding an easier market than at present, the Company may do even still better than would appear at first sight.

25. As has been stated before, wire rod is the principal raw material of the industry. Under the Board's proposals for the protection of bars and rods by a duty of Rs. 40 per ton, the wire rods would have cost this industry Rs. 195 per ton, whereas at present they are able to import continental wire rod at Rs. 170 per ton. An additional compensatory protection of Rs. 25 per ton would, under ordinary circumstances, have been necessary. No proposals on these lines, however, are necessary, for the reason that by an agreement entered into between the Tata Iron and Steel Company and the Indian Steel Wire Products Limited for a period of 5 years, the former have bound themselves to supply to the latter 4,000 tons of wire rod at a price which is to be the mean of British and American f. o. b. prices *plus* ten shillings per ton. These prices happen to be in the neighbourhood of about £11 per ton, and therefore the price payable in future will be approximately equal to the price at which the Company is importing at the present moment. It is possible, however, that, as Mr. Walchand hopes, the price to the Company may go down when the Tata Iron and Steel Company commence their deliveries. In that case, the industry may, by that fact, get more profit than has been taken into account. On the other hand, it is equally possible that British and American prices which, in this particular class of manufacture, have a normal tendency to be higher than the Continental prices, may further develop in that same direction. In this event the profit may turn out to be smaller than it otherwise would be. It must be assumed, however, that the Company entered into this contract after fully weighing the fact that their cheapest market for purchasing wire rods was, at the time, the Continent, and that if, in the event, the contract turned out to be unfavourable, they would cheerfully accept that position as arising from a reasonable risk which they had undertaken with their eyes open in the ordinary course of business. It is perhaps of some interest to note that, if the British and American prices do not rise above their present level, the Tata Iron and Steel Company are giving to the wire industry compensatory protection at the rate of about Rs. 25 per ton which should otherwise have had to be given by the country.

26. If circumstances make it necessary, an offsetting duty in accordance with our proposals in Chapter III of the First Report should be levied.

Proposals.

27. The proposals may now be summarised as follows:—

- (1) That a specific duty of Rs. 60 per ton be levied on wire nails and on all wire, plain or galvanised, other than barbed or fencing wire. These two kinds should remain subject to the present *ad valorem* duty of 10 per cent.
- (2) That if and when necessary, an offsetting duty be levied on nails or any plain wire.

ANNEXURE C.

Note on the increased cost of wagon building in India due to the higher duties proposed on rolled steel.*Broad Gauge Wagons.*

The only list of quantities for broad gauge wagons which is sufficiently detailed for purposes of calculation was supplied by Messrs. Burn and Company for the 750-type wagon for which they tendered in 1913 (see printed statements of Indian Standard Wagon Company, pages 21 and 22). The total weight of the materials of which details are given is $132\frac{1}{2}$ cwts. The summarised statement on page 22 shows the weight (without wheels and axles) of the 750-type wagon to be 131 cwts. and of the A-1 type to be 153 cwts. Both types are 4 wheeler covered goods wagons, and the Board were informed that the designs were generally similar.

2. The items are shown in Statement I (annexed). On items totalling over 99 cwts. the additional duty will be about Rs. 88. On items totalling 30 cwts. there will be no additional duty. The items forming the remaining 3 cwts. (screw-couplings etc.), are not definitely classified, but the extra duty (if any) on all of them will not exceed Rs. 5. The extra duty on the materials for the 750-type wagon would thus be about Rs. 93. The A-1 type wagon is about 17 per cent. heavier, and if it is assumed that the material is divided in much the same way as in the 750-type, the additional cost of the materials, due to the higher duties, would be about Rs. 110.

3. It was not made clear in the evidence whether the weights shown in the statement were the weights of the materials actually in the finished wagon or of the materials consumed. The latter would be between 5 and 10 per cent. higher than the former. If it be assumed that they are the weights as in the finished wagon, and that 10 per cent. more material has to be consumed, a further sum of Rs. 11 should be added. A total of Rs. 121 thus appears to be the maximum amount for the extra duties on the materials required for an A-1 type wagon.

Metre Gauge Wagons.

4. The most detailed list of quantities for metre gauge wagons was supplied to us by the Bombay, Baroda and Central India Railway with their letter No. T.-219, of January 5th, 1924. The wagon dealt with is the M. A.-2 type, 4 wheeler covered goods. The weight of the finished wagon (without wheels and axles) is 90 cwts. The materials of which we have been given particulars total 98 cwts. in weight. The quantities thus appear to be those

of the materials consumed in the manufacture of the wagon. They can be classified as follows:—

Material.	Quantity.	Present duty: 1924 Valuations.	Proposed Duty.	Increase.
	Cwts.	Rs.	Rs.	Rs.
Channels	9	7-6	13-5	5-9
Angles	16-6	12-4	24-9	12-5
Plates	40-5	30-4	60-8	30-4
Bars	7-4	5-0	14-8	9-8
Bars for rivets and bolts .	3-5	2-4	7-0	4-6
TOTAL MATERIAL SUBJECT TO EXTRA DUTY.	77-0	57-8	121-0	63-2

Not subject to extra duty.

Spring steel	}	Total weight, 21-0 cwts.
Springs		
Iron stampings (assumed to be grade A)		
Castings of brass, steel and iron		

Materials not classified.

Door controllers.
Miscellaneous stores.

It will be seen that material forming 80 per cent. of the weight is subject to extra duties totalling Rs. 63-2. If the door controllers and certain parts of the miscellaneous stores are made of materials subject to extra duties, the total additional duties on the materials for the M. A.-2 type wagon would be about Rs. 70.

STATEMENT I.

BROAD GAUGE WAGON.

(4 wheeler covered goods.)

Table of duties.

Material.	Quantity.	Present duty : 1924 Valuations.	Proposed Duty.	Increase.
	Cwts. qrs. lbs.	Rs.	Rs.	Rs.
Angles	16 2 16	12-4	24-8	12-4
Channel.	19 0 26	16-3	28-8	12-5
Plates ($\frac{1}{2}$ " or over)	23 1 19	17-5	35-1	17-6
Flats, rounds, etc.	6 1 8	4-2	12-6	8-4
Sheet or Plate (under $\frac{1}{2}$ ").	6 0 7	5-3	9-1	3-8
Roof sheets	5 2 10	8-5	12-8	4-3
Bars for Buffers, Rivets, Bolts, Axle-guards, Wearing strips, Door details and Shoe brackets	22 0 1	14-8	44-0	29-2
TOTAL CLASSIFIED .	99 1 13	79-0	167-2	88-2

Items unclassified.

Draw bar cradle	} Total weight 3 0 8
Screw couplings	
Split pins	

Items on which there will be no change.

Axle boxes, Spring shoes, Face plates, Hanger brackets, Cast Iron, Wrought Iron (Presumed Grade A), Yorkshire Iron, Spring steel, Galvanised rivets, Galvanised washers, Wearing blocks Vacuum brake and Springs. Total weight 30-0-8.

